tkint, T., E. Verheyen & D. Adriaens (2010) - The implications of mouthbrooding on feeding performance of two closely related cichlid species. Annual Meeting of the Society of Integrative and Comparative Biology (Seattle, USA). (oral presentation)

ABSTRACT:
The cichlids of the East African lakes are known for their rapid speciation and extensive morphological diversity. Most of that diversity is located in the head region and can be related to their trophic ecology. The heads of fishes are, however, so densely packed with structures performing different functions, that it can be expected that some of these functions may not be optimally exerted, especially when several functions are performed by the same apparatus. The oral apparatus, for example, not only plays a role in feeding and breathing, but also serves to incubate the eggs in many cichlid species. The aim of this study is to better understand the implications of mouth-brooding on the morphology and performance of the feeding apparatus, because we expect a trade-off between direct fitness (reproductive success) and indirect fitness (feeding performance). We also hypothesized that these implications depend on the dominant mode of feeding (suction vs biting), so we studied this trade-off for two species of maternal mouthbrooding cichlids: a 'suction feeding' Haplochromis piceatus and a 'biting' H. sauvagei. Comparing males, where the constraint of mouthbrooding is absent, to females may allow us to unravel this trade-off. A geometric morphometric analysis of external morphology showed clear interspecific and intersex differences. Functional characterization revealed that some aspects of feeding performance (e.g. theoretical bite force) do indeed show a trade-off with mouth-brooding capacity.